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THE WHITE-WINGED WOOD DUCK IN INDIA

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The White-winged Wood Duck *Cairina scutulata* is an unusual waterbird restricted to small, stagnant or slow flowing wetlands (streams, ponds, bheels) amongst level areas of tropical moist or swamp forest in South-East Asia. It is one of the largest duck species, and unlike the other ducks of India it is non-migratory, does not form flocks, does not occur on large, open rivers, lakes or reservoirs and the sexes look almost identical. The Wildfowl & Wetlands Trust has recently carried out a study to clarify the status of the White-winged Wood Duck in the wild and the conservation actions necessary to ensure its survival (Green 1992). Asian Wetland Bureau and ICBP have assisted in the project. A literature search and help from 50 people with local expertise and field knowledge allowed a review of all current and historic data on this species. This information has been used to build up a picture of the causes of decline of the Wood Duck, its habitat needs and biology and to draw up a conservation plan to prevent its extinction. This article contains a summary of the findings of this study in India.

In the last century, the Wood Duck was very widespread in North East India with historical records from lowland plains and upland plateaus in Assam, Arunachal Pradesh, Nagaland, Meghalaya, Manipur and Tripura. The bird also occurred in Bangladesh (Chittagong Hills), Burma, Laos, Vietnam, Thailand, Cambodia, Malaysia and Indonesia. It was "common" in Lakhimpur and Dibrugarh Districts, Upper Assam (Hume & Marshall 1880), and the fourth commonest wildfowl species in forest bheels of the Sadiya Frontier Tract (Upper Assam) during the palaearctic winter when this area is visited by large numbers of migrants (Parsons 1940). Since then, there has been a drastic decline caused mainly by the devastation of lowland tropical forests. Forest is essential for roosting and breeding, although the species can sometimes survive and breed in degraded or secondary forests. By 1982, forest cover in Assam was reduced to only 22% of its original area (A.K. Singh in litt. 1991). Hunting has also played a major role in the decline in some areas. There are still regular reports of birds being taken for food in Assam, and some forest areas have recently been occupied by insurgents and by the army, probably increasing hunting pressure. The birds sometimes feed in ricefields, where they may be affected by contamination with pesticides. The number of Wood Duck surviving is now probably less than 5% of the number at the end of the last century.

Fig.1 shows the contrast between the past and current distribution of Wood Duck in India, and demonstrates their disappearance from areas such as lower and central Assam that are now almost entirely deforested. There are at least 17 small, isolated populations of Wood Duck surviving in

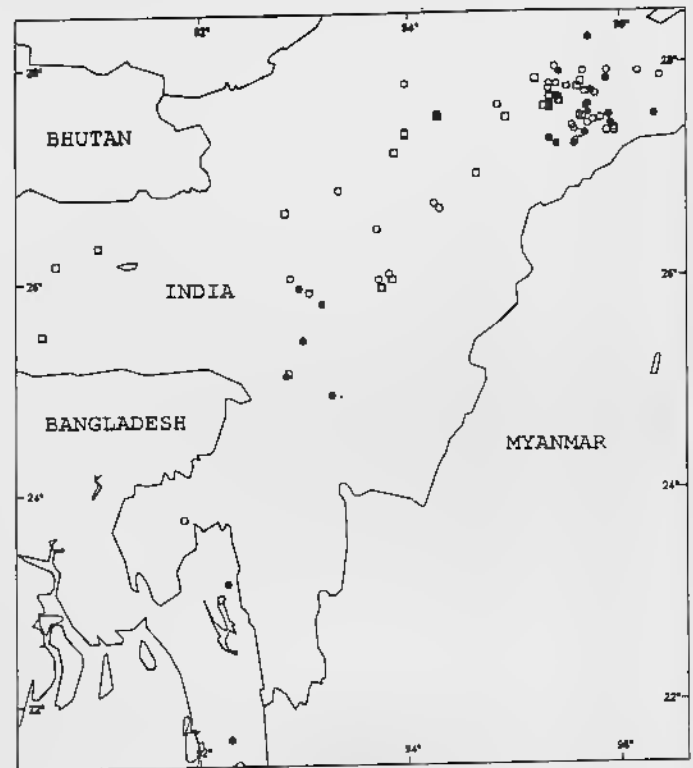


Fig.1. Records of *C.scutulata* in India and Bangladesh. Open squares indicate records pre 1940 or undated, open circle 1940-1980 and solid circles post 1980. Some records that lack geographical coordinates (e.g. in Manipur) are not shown.

India, 14 in Assam (Dibrugarh, Nowgong, Silchar, North Cachar and Lakhimpur Districts) and 3 in Arunachal Pradesh. These sites are listed in Table 1. In total, the known population in these sites is only 65 birds. This is likely to be an underestimate as their shy, retiring habits make the birds difficult to locate, and none of these sites have recently been surveyed in detail. For example, Nam Dapha National Park has the potential to hold many more than the seven birds seen to date. There is an urgent need for field surveys to establish the actual size of the populations already identified, and to look for other populations in remaining areas of suitable habitat.

The survival of White-winged Wood Duck hangs in the balance, because if no action is taken many of the surviving populations will probably be eliminated within a few years by continuing deforestation and hunting. Hence conservation action to improve protection of the duck and its habitat is urgently required if White-winged Wood

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Editorial

The U P Wetlands

The two articles by Abdul Jamil Urfi and Asad Rahmani reflect the rich waterfowl population of the region. It is encouraging to note that the administration is drawing up Management Plans for some of the wetlands. If the 159 professional trappers referred to in the articles could be involved in tourism promotion and "ecological studies" - netting, ringing, recording and release of the birds - they might become allies of conservation. If the authors would initiate a dialogue with the trappers and find out what their income is from this activity perhaps we could submit the findings to Mr Ashok Kumar, Advisor, Wildlife, in the Ministry of Environment and Forests. The Ministry might consider a plan to involve the trappers and the hunters into a plan for 'Sustainable use of Resources' - a slogan which is very much in the air these days, and which will be the main theme of the Eco-Summit in Brazil from the 1st of June this year. There have been surprising instances of poachers turning into conservationists by proper motivation. The most remarkable case being of the Bedouins of West Asia. Under a WWF Project these erstwhile hunters are now patrolling the Sanctuaries set up to protect the ARABIAN ORYX.

Agricultural Ornithology

In the early 50's Salim Ali expressed his surprise and unhappiness, at India, an agricultural country paying so little importance to Economic Ornithology. Now 40 years later all the Agricultural Universities have Ornithologists who are engaged in studying the beneficial as well as the harmful effects of birds on the crops of our country. A

meeting on Agricultural Ornithology was held at Kota, Rajasthan in November last year, and its report contains information carefully collected from the field. Many crops like pearl millet, sorghum, maize, soya bean, late sown wheat, mustard and coriander suffer greatly at the hands of the beaks of birds. In Rajasthan the principal culprits are the roseringed parakeet, baya weaver bird, and peafowl.

Dr G.C. Tiwari, Principal Scientist (Entomology) ICAR, Delhi, referred to ten species of birds which are serious pests, and among these the roseringed parakeet heads the list. In the case of sunflowers 99% of the birds damaging

the flower heads were roseringed parakeets and the rest were house crows. It is noteworthy that during January and February, starlings outnumbered even the vast numbers of roseringed parakeets and Pied, Jungle and Brahminy mynahs in agricultural fields.

I was interested to read that in a honey bee farm, though the elegant green bee-eater was the only bird which fed on honey bees, even here they fed also on other flying insects. So, as the report says, "the species is not exclusively harmful".

BIRD CONSERVATION AT SOME LESSER KNOWN WETLANDS AROUND DELHI

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Due to presence of the river Yamuna and its irrigation canals, the Delhi region (comprising territorial limits of Delhi as well as parts of the neighbouring states) abounds with wetlands. For migratory waterbirds, wetlands along their route function as "a linked chain of stopover sites - each site acting as a bottleneck in regulating bird population densities". Since the Delhi region is an important breeding and staging ground for several species of resident and migratory waterbirds (Ganguli, 1975) its wetlands therefore merit attention. Also, and importantly, wetlands of this region are poorly known in terms of their birdlife, and some are also gravely threatened.

In this article we wish to emphasize the ornithological and conservational significance of some lesser known wetlands of Delhi region in Sonipat and Meerut districts of Haryana and Uttar Pradesh, respectively. Our surveys were mostly done in January-February, 1992, although these sites had been visited before by one of us (SCS). Eleven of the ornithologically important wetlands encountered are mentioned below, by the name of the village in their vicinity.

1. Rohat (Joar*)

Seven km from Sonipat on the road to Rohtak this wetland is approximately 2 acres** in size. Large numbers of Pintail, Shoveller, Common Pochard, Spotbill Duck, Coot as well as several cormorants, waders, herons, etc. were seen. Deep at some points (5-7'), with steep bank, it's shallow areas have plenty of emergent vegetation (*Typha* reeds and grasses).

2. Barhwasni : (Bark - Banyan, wasni - settlement)

It is a largish (15 acres) shallow pond with luxuriant emergent vegetation, 7 km from Sonipat on the road to

Gohana. Besides Pintail, Shoveller, Spotbill Duck, Coot, Brahminy Duck, Waders, Herons etc. we also saw Sarus Crane (1 pair), Blacknecked Stork (1) and small flocks of Wigeon, Gadwall and Tufted Duck. About 185 species of birds have been recorded on previous visits. This wetland is rainfed and canal fed and the human settlement in its vicinity is not very large.

3. Beedhal

Lies further up on the Sonipat-Gohana road. Most probably it is a dug-out, rainfed depression since it has steep banks, muddy water and virtually no vegetation. Although we observed only Coot and Debcick on our visits, in 1989, while surveying for cranes with Mr Prakash Gole we saw several Sarus and waders here. Sarus families have continued to be quite faithful to this site. We suspect that in drier months this area may be a staging site for them.

4. Kheri-Dhamkan

It is a medium sized (5-7 acres) wetland, about 6 km from Gohana and has a large settlement on its bank. In spite of it, we saw Pintail, Shoveller, Spotbill Duck, Gadwall, Tufted Duck, Coot and Wigeon in large numbers. There is less or no emergent vegetation here although on some thorn trees in the middle we saw cormorant, egret and herons roosting.

5. Gohana Pond

Right in the heart of Gohana town lies a largish pond (15-20 acres). Most probably it started as a shallow depression which grew in size when mud from its banks was scooped out for construction, as the township grew. We saw Pintail, Shoveller, Spotbill Duck in impressive

* Joar, Jheel, Tal, Tallab, etc. are local Hindi terms for wetland viz. pond, marsh, tank etc.

** Wetland areas mentioned in this article are gross estimates only

numbers, which really surprised us because the pond is quite naturally disturbance prone and polluted and has a burning ghat on its bank. On some large acacia and sheesham trees in the middle we saw heron, egret, cormorant and whitebacked vultures roosting.

6. Rithal

Lying approximately 15 km from Gohana, this was the largest wetland (about 50 acres) in our survey. It has a large rural settlement on the eastern bank. Besides the large flocks of ducks we saw Spoonbill, White Ibis, herons, egrets, waders etc. SCS has seen large flocks (500 birds) of Common and Demoiselle Crane on previous visits. The western bank is gradual and has patches of emergent vegetation. During summer a part of this area (privately owned) is used for cultivation.

7. Drain number 8 near Rithal and marshes along Western Yamuna Canal

Drain no.8 is a sewerage which zig zags between Gohana and Rithal. After first few km from Gohana it loses much of its unpleasantness and at the point where it transects the Yamuna canal, approximately 8 km from Gohana, we discovered a birders paradise. Stopping at some sluice gates near a hydel complex we saw a flock (about 100) of Barheaded Geese, 6 Sarus, 8 Painted Stork, as well as Spotbill Duck, Pintail, Purple Moorhen, Grey Heron, Black Ibis, White Ibis, etc. One Blacknecked Stork was seen in flight. Travelling along the canal we saw a Blackbuck (antelope), several Sarus and Black Ibis feeding in agricultural fields. An interesting observation was that some eucalyptus trees between the twin Yamuna canals are used by Large Cormorant for roosting and nesting. On some trees, which looked perfectly white on account of bird droppings, we saw over 200 Large Cormorants (we have seen a similar situation at Bhindawas Lake Bird Sanctuary, also in Haryana). In some seepage patches along the canal we saw several small waders viz. Lapwing, Blacktailed Godwit, Blackwinged Stilt, Avocet, Little Ringed Plover, Redshank, Greenshank, Common Sandpiper, Ruff and Reeve, Little Stint, etc.

8. Purkhaspur Ponds

In the Purkhaspur village are 67 ponds, varying in size between 5-15 acres. In each of them we saw large number of Pintail, Shoveller, Common Pochard, Common Teal, Blackwinged Stilt, Avocet etc. Some ponds are partially covered by water hyacinth but none has much emergent vegetation. A few km away lies Moi village which has a 3 acre, recently dug out pond, used for cattle bathing, water storage, etc. We saw here large number of Shoveller (feeding) and also Pintail and Common Pochard in lesser numbers.

9. Dhupeta

This is a large sized (approximately 25 acres) shallow wetland having plenty of emergent vegetation. The village panchayat has leased it out to professional fishermen and we saw their workforce and gear scattered all over. Either due to the fish in the pond or due to fishing activity (hauled fish is temporarily laid out to dry on the shore) we saw large number of fish eating birds viz. terns (Blackbellied, River and Whiskered Tern), White Ibis, Whitenecked Stork, etc. In the shallower reaches we saw Purple Moorhen, Blackwinged Stilt, Pont Heron, Little and Median Egret, White-tailed Lapwing, Snipe, Coot, Avocet, Ruff and Reeve, Sandpiper and several species of waterfowl.

10. Juan

The wetland near Juan-large sized (approx. 33 acres), shallow and marshy—was the most beautiful and ornithologically diversified wetland in our surveys. It has large patches of emergent vegetation, shallow water patches of submerged vegetation and large expanse of grasslands. We were therefore not very surprised to see a flock of Brahminy Duck (17-20) feeding here. We also saw 2 Blacknecked Stork, 3 Sarus besides several species of waterfowl and waders. On a large banyan tree we saw a few Whitenecked Storks and several nests. Although we later confirmed the nests as those of Whitebacked Vulture, we were informed that Whitenecked Storks also breed on this tree.

11. Dhindala Joar

Dhindala village in Meerut district, approximately 30 km from Delhi, is located on the banks of a large wetland (approximately 15 acres). Although we were told that this joar has rich birdlife, on our visit we saw only Coot (70), Brahminy Duck (72), few Dabchicks and a solitary Great Blackheaded Gull. The reason for the poor bird diversity we learnt soon enough: The village panchayat has leased out the pond to a fish contractor who also cultures fish to replenish the stock. He showed us his breeding 'hapas' and nurseries and informed us that the joar now had only carps and some other commercial species—local varieties like catfish and murrel were eliminated. Since birds like cormorant, egret, heron, etc. inflicted heavy losses on his stock he therefore drove away all the birds. The only redeeming factor in this person's acts was that he also took pains to clear water hyacinth from the joar.

Barely a km from Dhindala lies another, shallow joar (Dhindala Joar No.2), approximately 20 acres in area. This marshy land is owned privately but since it is uneconomical to drain it for cultivation, it is left as such in winter. Here we saw Pintail, Spotbill Duck, Shoveller, Common Teal, Gadwall, Common Pochard, Wigeon, etc. in large numbers. About 25 Greylag Geese, 20 Spoonbill, several White Ibis, Purple Moorhen, Grey Heron, etc. were also seen. Surprisingly large number of White-tailed Lapwing were seen on its bank, among other waders.

Other Wetlands

In this article not all the ornithologically important wetlands in and around Delhi have been dealt with, since we concentrated our surveys on a limited area lying north to the capital. However, some other wetlands of this region, important from the viewpoint of waterbirds are: Delhi Zoo, Okhla Barrage and several stretches of river Yamuna, Dasna Lake, Najafgarh Drain, Sultanpur National Park, Damdama Tal, Badkhal Lake, Tilyar Lake, Bhindawas Bird Sanctuary, Khaparhwas Lake Bird Sanctuary, etc.

Conservation

Nearly all the wetlands which we encountered in the present survey were located in the vicinity of a river canal (and so derived water from seepage or through some connection) and were reportedly in existence for ca 100 years, except Moi and Kheri Dhamkan tanks and Dhindala Joar no.2. All had waterbirds in impressive numbers (that's why we were there) but we wondered — why did they have different types of birds? One of us (AJU) is interested in detailed field studies aimed at testing some specific hypothesis pertaining to diversity of waterbirds at these wetlands.

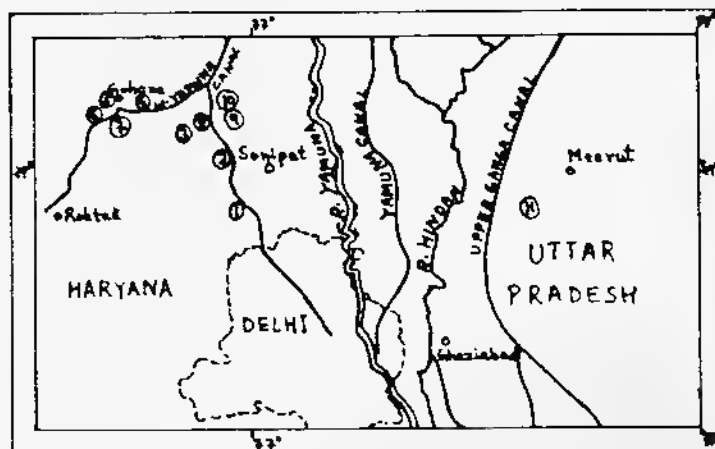
Joost Vander Ven (1987) in the first Asian Waterfowl Census report observes that wintering birds in India are considerably tolerant of human beings in their vicinity as compared to other (presumably western) countries. While there are certainly great inter-specific differences in alertness (for instance, Brahminy Duck are considerably more wary of humans at their wintering grounds, compared to other species) by seeing birds in Gohana and Kheri Dhamkan ponds; we marveled that such numbers and types of wild waterbirds could exist peacefully and apparently unmolested so close to large human settlements. In the Delhi Zoo ponds a similar situation prevails but then, this site is largely protected.

While some of the wetlands encountered were quite polluted by domestic sewage and also partially infested by water hyacinth, remarkably few (only Dhupeta) appeared to be immediately threatened by land reclamation. However, we know of an instance in Haryana when a large wetland was completely drained for cultivation purpose last year. When we visited this wetland — known as Bhambewa Tal — in 1989 along with Mr Gole we saw 5 Blacknecked Stork (including 2 in subadult plumage), 35 Painted Stork, 2 Sarus and 1 Lesser Adjutant Stork, besides large populations of ducks and waders.

While viewing wetlands from bird's conservation perspective it is easy to forget that the type of wetlands we are left with now are primarily panchayat owned village ponds. Obviously these are useful for a variety of purposes viz., fishing, washing, cattle bathing, water storage, cultivation of aquatic plants (especially *Trapa* cultivation), etc. Gole (1989) observes that for the welfare of large wetland birds like Sarus, in Haryana and Western Uttar Pradesh, preservation and improvement of these village

ponds is much more crucial than campaigning for the creation of more bird sanctuaries. Thus, it is important to take steps for the preservation of such wetlands (for birds!), with the involvement and cooperation of panchayats, since the land is primarily theirs. Some recommendations for the benefit of concerned authorities and environmental action groups are :

1. Grass root level education and preparation of illustrated bird looks in Hindi, for circulation among villagers and panchayats;
2. Some private lands near panchayat ponds, which attract waterbirds, can be taken over by wildlife departments and properly managed, keeping the requirements of waterbird conservation in view;
3. Plantation of trees such as Acacia, Sheesham, Jamun, Banyan, etc. at the edge of wetlands or on mounds in the middle should be encouraged, since this may be an inducement for birds like stork, ibis, heron, etc. to breed. To start with the area between the twin branches of West Yamuna Canal passing through Sonipat (Khubru waterworks) and Rohtak, can be developed as a breeding site for colonial waterbirds, along these lines.



Legend to Map : Sketch map of Delhi and neighbouring areas in Haryana and Uttar Pradesh showing major rivers and canals and location of wetlands mentioned in the text.

Key : 1. Rohtak, 2. Barhwasani, 3. Beedhal, 4. Kheri Dhamkan, 5. Gohana, 6. West Yamuna Canal and Drain no.8 intersection, 7. Rithal, 8. Juan, 9. Dhupeta, 10. Purkhaspur and 11. Dhindala.

Acknowledgment

We are grateful to Mr YM Rai and sarpanches of various villages for help. One of us (AJU) is grateful to CSIR for the award of a research associateship.

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Request for Information

We are interested in seeing and studying breeding sites of heronry birds and will be grateful if any of the readers

of *Newsletter* could inform us about nests/heronries of stork, ibis, spoonbill, egret and cormorant in their locality. We are interested in sites not only from the North Indian region but from the whole country. Information on species nesting, tree species utilized, village, district, state, when and how to reach, etc. would be most useful. Any information and help received will be duly acknowledged. Please address all letters to our correspondence addresses printed above.

WETLANDS OF UTTAR PRADESH — PART 2*

ASAD R RAHMANI, Centre of Wildlife and Ornithology, Aligarh Muslim University, Aligarh
and

V M ARORA, Divisional Forest Officer, Social Forestry, Mathura, UP

In the first part of the series we have described two wetlands: Patna jheel in Etah and Sur Sarowar Bird Sanctuary (Kheetham Lake) in Agra district. In the present article we are describing two more wetlands which we visited together (Saman) or separately (Lakh-Bahosi).

1. Lakh-Bahosi

As the name indicates, Lakh-Bahosi is not one but two wetlands. Both these wetlands, located at a distance of 3 km from each other, in Farrukhabad district have been declared in 1987 as waterfowl sanctuary. The twin lakes are situated near Indergarh village in Chhibraman tehsil, and nearest big town is Kannauj, 32 km away. Kannauj is about 55 km from Farrukhabad on Kanpur-Delhi national highway. Kannauj is a historical town with a museum containing some valuable antique pieces.

Both the jheels, Lakh and Bahosi, are located near the Lower Ganga Canal so the overflow and seepage of water accumulates in the jheels, resulting in about 600 hectares of shallow wetland perfectly suitable for waterbirds. By winter, the water spread is reduced due to evaporation and drainage. Nonetheless, at least three to four hundred hectares in the deeper parts still retain sufficient water to attract at least 50,000 waterfowl. Apart from these two jheels, there are numerous smaller wetlands beside the canal in an area of about 80 sq. km. Although it is difficult to estimate the number of waterbirds in all these wetlands, the second author thinks that there could be 200,000 birds.

Credit for development of Lakh-Bahosi waterfowl sanctuary should go to Mr KK Sinha, the then Collector of Farrukhabad, who during one of his tours saw the wetlands. Mr Sinha being keenly interested in conservation was impressed by the number of waterfowl sheltering in these jheels. With the help of Revenue, Irrigation and Forest departments he developed a management plan and quickly sanctioned the initial funds. Finding the collector

interested in conservation, the executive engineer decided to transfer the unused 100 year old inspection bungalow into a tourist complex. The Forest Department planted shade and flowering trees around the bungalow. Decrepit bunds through which water was drained were repaired resulting in more water for birds. A project for the development of these jheels was prepared by the second author, and Government of India approved Rs 5.62 lakhs.

The number of birds in Lakh-Bahosi varies according to the seasons and waterspread. We estimate that during winter not less than 50,000 ducks and waders are present in these wetlands. We have seen Great Crested Grebe, Little Grebe, Pintail, Shoveller, Gadwall, Wigeon, Spotbill, Common Pochard, Tufted Pochard, Common Teal, Garganey, Mallard, Comb Buck, Brahminy Duck, etc. At Bahosi, we saw a pair of Blacknecked Storks, 20 Barheaded Geese, 20 Greater Flamingo, while in Lakh, two flocks of 400 and 600 Greylag Geese dominated the 'show', despite the presence of about 150 Greater Flamingo and the same number of noisy Whistling Teals. Lakh was also full of Brahminy Ducks. During the first author's visit in January 1988 with India's famous wildlife artist Carl D'Silva, 152 Brahminy Ducks were seen in Lakh alone. There were many more in nearby wetlands.

Among raptors, Marsh Harriers were present in both jheels but we could locate Greater Spotted Eagle, another raptor of Indian jheels during winter, only in Bahosi. In between these jheels, agricultural fields and wasteland (locally called 'usar') areas are present which have different avifauna. Grey Francolin call was heard many times, and a solitary Indian Courser, with its handsome plumage, china-white legs and dignified gait delighted us.

2. Saman jheel

About 100 years ago, Saman jheel in Mainpuri district, along with Lakh-Bahosi and other jheels formed an

*This should have preceded part 3 which appeared in the Jan/Feb 92 issue — a result of editorial mismanagement!

important habitat for the Siberian Crane. The great ornithologist A.O. Hume, who incidentally was one of the founders of Indian National Congress, between 1858 and 1867 saw Siberian Cranes in many jheels in Etawah and Mainpuri districts. Saman could have been one of the important sites although we could not find any mention of this jheel by name in Hume's records. The name 'Tuman' jheel (26°46'N and 79°02'E) is referred to by Wilkinshaw where W.E. Brooks shot three Siberian cranes in February 1871. It appears that Tuman jheel is none other than Saman jheel.

The 336.6 hectare Saman jheel is one of the largest existing wetlands in Mainpuri district. With its large size, its problems are also numerous due to human overuse. Draining, fishing, shooting, netting, grazing, water-hyacinth, grass cutting and pollution — every problem which a wetland can face is present in Saman. Although the UP Forest Department has declared 526.3 hectares of Saman as a bird sanctuary and the second author has prepared a management plan with an outlay of 6.98 lakh rupees, it is difficult to imagine that the Forest Department can gather the necessary administrative and political backing to implement this plan which will involve curtailment of villagers' rights around the jheel.

During our visit in January 1991, we found people all over the jheel, either cutting grass or fishing or grazing livestock or draining water through narrow channels to cultivate the dried up land. The jheel is surrounded by numerous villages — even a small settlement is present inside the jheel which can be reached only by fording.

No doubt, at one time Saman would have been an excellent wetland but at present it is in extremely disturbed state. Despite this, during the first author's visit with Carl D'Silva in 1988, 50 Greylag Geese, 22 Painted Storks, two pairs of Sarus and more than 200 Openbill were seen in a small part of the jheel. Apple Snail *Pila globosa*, a favourite food of Openbill, was abundant.

The shallow water of Saman, with its submerged and emergent vegetation is ideal for ducks, waders and cranes, but we did not see many, thanks to 150 professional trappers active at that time. With recent protective measures and appointment of wildlife guards, trapping has decreased but drainage of water by villagers is not easy to control. Most of the jheel is already under private holdings and to get back the land for environmental management seems impossible.

MOVEMENTS OF MIGRATORY ROSY PASTORS ABOUT JODHPUR

H.C. BOHRA, Senior Scientist, Central Arid Zone Research Institute, Jodhpur 342 003

The Rosy pastor *Sternus roseus* (Linnaeus) is one of the earliest migrants to the Indian subcontinent. It breeds in eastern Europe and in western and central Asia in May and June and migrates to the Jodhpur region by July. These birds remain up to early April in Saurashtra (Dharamkumarsinhji, 1954) and up to late April in northern India. They may be seen in large numbers in Pakistan, NW, India and the Deccan plateau and in smaller numbers towards its eastern limit in Bengal, and in south India (Ali and Ripley, 1987). Whistler (1938) mentioned that these birds were quite common around Jodhpur. According to Sharma (1980), Rosy pastors remain in the Indian Thar desert between August and April. The present study, conducted during two consecutive monsoon seasons (1989-90 and 1990-91), deals with the movements of migratory Rosy Pastors in and around Jodhpur city (26°18' N, 73°01' E).

The first swarms of Rosy pastors were seen in the third week of August when several birds were seen foraging on the ground under eucalyptus plantations, date palms,

pomegranate and *ber* orchards and also in open scrub land grass and a few *khejri* (*Prosopis cineraria*) trees. Most of these birds at the time of arrival possessed badly moulted plumage, and were seen consuming ripened bright red figs of the banyan (*Ficus bengalensis*).

The fruiting of the banyan tree is influenced by the onset of the monsoon. Late arrival of the monsoon, in 1991, caused a late setting of fruits in the banyan around Jodhpur. As a result, Rosy pastors were seen in banyan trees on later dates (in the first week of September) than usual. The general influx of these birds was considerably less this year than in normal rainfall years. At the time of their arrival these birds were not too active or noisy. When flushed, while foraging on the ground, they reluctantly left the ground and perched on the nearby trees. During the first week of September these birds were also seen perching on *Acacia tortilis* trees which were then in flower.

After September, the Rosy pastors were not seen in and around Jodhpur city but they were seen in large numbers on cropped rural areas having sandy and sandy to loamy

soil. The late monsoon delayed the movement of these birds from the city to the open scrub areas. In 1991, these birds were seen in the city till the third week of October and were seen foraging on *bordi* (*Zizyphus nummularia*) and *kair* (*Capparis decidua*) bushes growing on the bunds and in large open areas. During this time almost all the bushes were covered with a lush green climber, *ankh phutani bel* (*Mukia madaraspata*), which bore numerous small globose fruits of 4.5 mm diameter. Its unripe fruits have longitudinal green bands on the pericarp and when ripe these fruits acquire a glistening red colour. Rosy pastors avidly consumed the fruits of this climber, both at the unripe and the ripe stage and also the flowers and fruits of *kair* when available, and *matira* (*Citrullus lanatus*) — a variety of wild water melon — seeds. One afternoon, Rosy pastors were seen picking seeds from a heap of *matira* fruits kept for drying in an open agricultural field, but only a single bird came at one time and later joined its companions perching on a nearby *khejri* tree. Several birds were seen in non-glistening plumage in October.

During the coldest days in winter, the diurnal activity of these birds begins with their basking in the morning sun while perching on the top branches of *khejri* or other trees. During daytime, flocks of these birds comprising of 10-20 birds each concealed themselves under the green carpet of leaves of *M. madaraspata* covering *bordi* and *kair* bushes and on the thorny boundaries of agricultural fields. It is the time when these birds forage and frequently emit harsh calls to keep in touch with each other in their flock. In the evening about 300 relatively quiet birds were seen around a waterhole. Here these birds were seen at the edge of the water, either foraging on the bank or perching upon leafless *kair* bushes growing on the banks. At dusk, a similarly large number of Rosy pastors, along with several other perching birds like the house sparrow, have been found to collect under the dense foliage of *khejri* or *kankera* (*Mylenus emarginatus*) trees where they together sing the day's last song which is very loud but pleasing and harmonious.

By the third week of January, when the ambient temperature rises to become moderately cool, several Rosy pastors started to reappear in the urban areas of Jodhpur and were seen feeding upon banyan figs and *rohida* (*Tecomella undulata*) flowers. The birds were very active and noisy at this time and they frequently moved from one plant to another in flocks of 10-15 birds. Later on, when this area experienced a cold wave, the Rosy pastors disappeared from the urban areas and could not be seen during the next 6-10 days. This may be due to the fact that large trees like the banyan may not give sufficient protection to these birds from the cold winds. Therefore, these birds apparently revert to scrub areas till the cold wave passes. Rosy pastors reappeared in the city areas in the second fortnight of February, when they were seen,

especially, during the morning, perching on the exposed upper branches of *vilayati babool* (*Prosopis juliflora*) which carried pods, and on *neem* (*Azadirachta indica*) and *siris* (*Albizia lebbek*). The birds were also seen foraging upon banyan figs and *semal* (*Bombax malabaricum*) flowers, available in plenty during this time.

By the first fortnight of March, the *pipal* (*Ficus religiosa*) started to bear figs which are green and bilobed. Now, the Rosy pastor's food preference changed from banyan figs to those of *pipal*. By the second week of March, thousands of Rosy pastors bearing a glistening black and rosy plumage appeared in the city area and were seen moving in small flocks of 20-30 birds each, from one tree to another, especially *neem*, *vilayati babool*, *rohida*, *semal* and *siris* trees. But after a few days, their major haunts became the *pipal* trees. This plant had, by now, started to shed its leaves but had numerous fruits. Now, almost every *pipal* tree growing either in the densely populated medieval walled city, or on the roadsides outside the city, were infested with as many as 200-300 Rosy pastors which were continuously emitting their characteristic harsh calls while voraciously feeding upon its fruits. But their calls were subdued for 6-10 days when this area experienced a spell of showers caused by western disturbances.

By the last week of April, the *pipal* trees acquired shining new foliage and started to lose their fruits, and the Rosy pastor's number started to dwindle rapidly. The year's first hot western winds was experienced on the 30th April and beyond 3rd May, no Rosys could be seen in the Jodhpur area.

Acknowledgments

We are grateful to the Director, Central Arid Zone Research Institute, Jodhpur, for providing the facilities for this study. Our thanks are due to Dr SP Goyal, Scientist, Wildlife Institute of India, Dehradun and Mr Om Joshi, Ranger (Flying) Wildlife, Jodhpur, for their valuable suggestions made during the study. We are also thankful to Mr Hanuman Ram and Mr Mala Ram for their assistance rendered while recording the observations.

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BIRDS ON THE WAY TO AND AT SERVALAR AND TAMBARAPARANI DAMS

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The Servalar dam is of a Hydro-electric project of Tamil Nadu. Situated at about 800 MSL and 22 km from Ambasamudhram in the district of Tirunelveli, it is surrounded by forests, and during the period of my stay for about four days (19th July — 23rd July, 1991) it was less sunny, windy, and on and off cloudy and occasionally mizzling; the vegetation was green and lush, it having rained earlier for some days. The Tambaraparani dam, bigger than the other and built about 30 years earlier (1938-43), has a more sylvan surrounding. One feels the awesomeness of the region as one takes a lonely walk along the tarred, winding pathway flanked by stately trees and thick undergrowth.

I recorded from the speeding bus the birds that could be located on the wires, in and over the paddies and water-bodies on either side of the road leading from Tirunelveli to Vikramasinghapuram, and from the car along the rest of the way to Servalar staff quarters. The morning and the afternoon bird-watching in the forest adjacent to the residential quarters and along the sides of the road leading to the Servalar dam and, for a few hours, at the upper dam, also called Tambaraparani dam, was quite rewarding from the point of view of a bird-watcher. One could intuitively know that the list of birds presented here below is but a poor fraction of what must actually be, and that from the very superficial observation one cannot know the actual pattern of distribution of this and that bird. However, it may be said that Servalar presents somewhat an edge effect.

Birds recorded enroute to Servalar

Little Cormorant *Phalacrocorax niger*. The bird was seen singly in isolated waterbodies and over fields on the plains. It can be seen in Tirunelveli throughout the year.

Darter *Anhinga rufa*. At Pothukudi a bird was observed sitting with neck out-stretched on an exposed mid-water rock in a muddy pool.

Pond Heron *Ardeola grayii* in breeding plumage and the Little Egret *Egretta garzetta* were common in the paddy fields. A lone median Egret *Egretta intermedia* alighted in a foot-deep waterbody at Pappakudi. Foraging among the Waterlilies in a pond at pettai were the pheasant-tailed Jacana *Hydrophasianus chirurgus*, at least five of them counted — all males, and a purple Moorhen *Porphyrio*

porphyrio. On the interfield bunds were the Blue Rockpigeon *Columba livia*. Flying about were the Pariah Kite *Milvus migrans govinda* and the Brahminy Kite *Haliastur indus*. There were the House Crow *Corvus splendens*, the Jungle Crow *C. macrorhynchos*, the Ashy Swallow Shrike *Artamus fuscus*, the Palm Swift *Cypsiurus parvus*, the Green Bee eater *Merops orientalis*, the Red Wattled Lapwing *Vanellus indicus* and the Rose-ringed Parakeet *Psittacula krameri*. Sitting on the wires were the House Sparrow *Passer domesticus*, the spotted Dove *Streptopelia chinensis*, the White-breasted Kingfisher *Halcyon smyrnensis* and the Indian Roller *Coracias benghalensis*. Exchanging positions between the ground and the perch, a wire or tree, were the Blackheaded Myna *Sturnus pagodarum* and the common Myna *Acridotheres tristis*.

As the car entered the reserve forest area a little beyond the checkpoint, a painted partridge *Francolinus pictus* hurried into the thicket from the roadside. The call of the Grey Partridge *Francolinus pondicerianus* was heard quite frequently.

Birds of Servalar not observed at the upper dam

Roseringed Parakeet *Psittacula krameri*. A relatively rare bird, only a few being heard and seen during the period of observation.

Koel *Eudynamis scolopacea*. I came across only a pair of the bird. While on the plains their call is quite frequent through the day, they were silent at Servalar.

Small Green-billed Malkoha *Rhopodites viridirostris*. Two birds were recorded on different days at spots not far removed from each other. The smaller of the two was carrying a feather in the bill, moving into a tangle of Loranthus in an Albizzia sp. perhaps to a nest there. The female koel was following it silently. Sensing me watching, the koel darted back into the tree from which she had emerged. The malkoha, however, did not mind me standing below looking at its physiognomy minutely, the feather no more in the bill. The bill was neither bright green nor the eyepatch blue; they were rather ashy green and ashy respectively. Was it perhaps a female? Does the koel parasitise another cuckoo and was she on an espionage and reconnaissance mission?

White-breasted Kingfisher *Halcyon smyrnensis*. A bird was observed sitting over a jungle stream, so wary that it

flew away even when observed from about forty meters away.

Green Bee eater *Merops orientalis*. It is a common bird at Servalar, the population comprising adults and young at varying stages of moulting; the bird is obviously a resident.

Crimsonbreasted Barbet *Megalaima haemacephala*. A wary bird, it frequented the 'cherry' tree. The call was subdued and infrequent.

Indian Goldenbacked Threetoed Woodpecker *Dinopium javanense*. I had only a glimpse of the flash of red of the fleeing bird twice in the same locality of vegetation, though dense, that looked more artificial than natural with large tamarind trees. It needs verification.

Common Myna *Acridotheres tristis*. Only a few birds were observed at Servalar.

Jungle Crow *Corvus macrorhynchos*. I saw only a pair but calls were heard deeper in the woods.

Pied Flycatcher-Shrike *Hemipus pictus*. In the afternoon on 22 July many birds of the species appeared suddenly in the thicket in front of the residential quarters, foraged on insects and frolicked.

Dusky Crag Martin *Hirundo concolor*. A common bird over the dam-bridge and the precipitous rocks. The uniformly sandy brown plumage appeared darker at the rump and tail.

Redrumped Swallow *Hirundo daurica*. A resident (s.sp. *erythropygia* ?) swallow, the migration of the northern forms not yet begun. A pair was observed sitting on and taking off from an electric wire. They were first observed on 21 July '91 and again at the same spot the next day.

Common Wood Shrike *Tephrodornis pondicerianus*. A bird about the colour of the bark of trees, has a call somewhat simulating that of the lora. It was seen in pairs, the members keeping in contact with each other by the melodious call notes made on the wing and from the perch.

Southern Small Minivet *Pericrocotus c. cinnamomeus*. Two males and a female were observed along with the flycatcher shrikes. A pair were noted the next day even as the shrikes had moved away to some other locality, perhaps deeper into the jungle.

Common lora *Aegithina tiphia*. The male with its melodious call and an attire of black head, dorsum and wings with white patches, and yellow underparts was seen with the dull female.

Jungle Babbler *Turdoides striatus*. The bird was conspicuous by the grating call made by all the members of the troop. Its behaviour was reminiscent of that of its

neighbour and cogenetic Whiteheaded Babbler *Turdoides affinis*. The latter was relatively silent. I located a live nest of the former some six meters from the ground occupied by a bird that did not mind my aggressive presence below to rouse her (or, him?); she looked out and sat back on the eggs. The nest was a bigger cup than that of *T. affinis*. The two species had divided the long stretch of the road-side jungle between them and confined themselves to their portions; no trespassing and clashes were observed.

Indian Robin *Saxicoloides fulicata*. True to the nomenclature, the males and the females were hopping about on and darting between rocks, boulders and dry-stan dikes.

Large Pied Wagtail *Motacilla maderaspatensis*. Only a pair or so was seen on the river bed and banks.

Loten's Sunbird *Nectarinia lotenia*. The birds occupied mostly the lofty foliage of trees and mingled with other nectar feeders. One male was in full black livery while the others were in eclipse plumage. Though generally very wary, the one in black breeding plumage, feeding from the flowers of a climber on the wire fence of the quarters, did not mind my being within five meters of him.

White-backed Munia *Lonchura striata*. Only one pair was observed during the period of bird-watching, representing the munias.

Puzzles : Four birds could not be identified

One, a bird about the size of the Ashy Wren Warbler but in plumage uniformly earthbrown except for the whitish undersurface; the bill black, the eyes red, the legs light flesh. Was it a male?

And the female (?) had black eyes and the bill was similar to the leg in colour. They were among the bushes on the open ground. Were they a babbler/warbler?

Two, an eagle or buzzard (*Buteo buteo*?) about the size of the Brahminy kite. A local boy named it, "Kallakazhugu". The bill yellowish, bill-tip black and curved, the upper wing coverts long brownish, covering the quills almost to the tip; tail short and square at rest; eye had buff circles, the legs buff. Disturbed, it made a slow leap and laborious flaps, keeping the body horizontal, reminiscent of an owl on the wing.

Three, another eagle (?) sitting motionless and erect like an owl on top of a tall dry stem covered by climbers in a nullah a little deep in the jungle. General plumage colour: dark ash; feathers ended in white edges. When the wind blew over the head the nape-feathers lifted in 'slabs' with the white edges showing in transverse lines. There was no crest as such. The crown as well as the body was sleek. The

tail when spread in flight was rounded and had narrow bars. The ashy bill had light buff cere at the base, the eyes black, the legs and the digits yellow. Disturbed, it made a quick leap, soared above the canopy and, circling elegantly without flapping of the wings, disappeared. Was it a serpent eagle? or, were this and the second different phases of the buzzard?

Fourth, a call similar to that of the Black bellied Finchlark: a drawn-out, low and soft Heee ong., Heee ong The bird did not show itself either on the ground or in aerial display.

Bird species of the upper dam not observed at Servalar

Little Cormorant *Phalacrocorax niger*. I observed one bird alight on the dam-water troubled by the excited tourist-boats.

Grackle *Gracula religiosa*. Also known as the Hill Myna, the bird is quite common in the upper-dam site, occurring in great numbers moving among the upper canopy. They avidly devoured the banyan fruits, and, in the meanwhile, engaged in badinage and skirmishes.

Marshall's Iora *Aegithina nigrolutea*. Its presence at Tambaraparani damsite was recorded with interest. Its status "as a distinct species is not settled and it is a challenge to geneticists and field workers alike".

Rubythroated Yellow Bulbul *Pycnonotus melanicterus gularis*. More than a pair of this bird were spotted in the lush vegetation at the second curve of the road down from the upper dam. A brilliantly plumaged bird, the representation of it in the pictorial Guide a farcry, with a matching sweet call was not a very shy bird. I could observe it for quite some time.

Yellowthroated Bulbul *Pycnonotus xantholaemus*. I saw only one bird of the species not so bright as the previous one. It was rather silent, sitting on a wire also occupied by its congener, a redwhiskered bulbul.

Birds common to both the damsites

Crow-Pheasant *Centropus sinensis*. A common bird in the jungle and around human habitations, moving among low bushes and stately trees. Its booming call was characteristic.

Grey Junglefowl *Gallus sonneratii*. I saw a pair, the female being followed by a male, in the evening on 19 July '91 at Servalar. At least five males could be reckoned to be present, considering the number, frequency and directions of the calls in the area under observation. The call was not

as sonorous as that of the domestic fowl reared in the quarters.

Blue Rock Pigeon *Columba livia*. Though a commonly seen bird in both the areas, the population-sizes were not as large as of those on the plains, around human habitations and fields.

Spotted Dove *Streptopelia chinensis*. The only dove to be seen sitting on the wires or foraging along the road sides both at Servalar and Tambaraparani.

Palm Swift *Cypsiurus parvus*. Several birds were observed over residential quarters and dams.

House Crow *Corvus splendens*. It was represented by small numbers of birds at both the sites.

Indian Lorikeet *Loricula vernalis*. A very common bird occurring in large numbers particularly at the upper dam, flying swiftly over the canopy. At Servalar, they visited a cherry-like tree and foraged among the minute yellow flowers, going over them briskly and tirelessly from twig to twig. My presence just about eight meters did not disturb them.

Large Green Barbet *Megalaima zeylanica*. Its characteristic call was ubiquitous. However hard I tried to locate the bird, I could see it but only once, a stout-billed and solvenly bird.

Golden fronted Chloropsis *Chloropsis aurifrons*. An agile greenish bird that kept itself to thick foliage. That it is an excellent mimic of the Drongo was a revelation made to me towards the end of the period of my stay at Servalar. I had been searching the area for the type of drongo that was making the call, in vain ! Strangely, not a single drongo species could be known from the area during the period.

If the Drongo was not there, why should this bird mimic it ?

Bulbuls. The Red Whiskered Bulbul *Pycnonotus jocosus*, the Red-vented Bulbul *P. cafer*, the Whitebrowed Bulbul *P. luteolus* and the Black Bulbul *Hypsipetes madagascariensis* were common birds, the first three in order occupying the lower strata, and the fourth, the highest canopy moving in batches of more than ten birds, the last ones often congregated and chatted vociferously.

The lower-strata birds mingled in the biotype and, defying the law of competitive exclusion, did not show indications of segregation in the habitat where they occurred together. The commonest of them was the Redvented Bulbul, and, the noisiest, the Whitebrowed Bulbul.

The Redwhiskered and the Redvented Bulbuls were observed to be breeding, carrying food for the nestlings. Extensive areas suitable for breeding and with unlimited food available, there is less interspecific competition, perhaps.

Tailor Bird *Orthotomus sutorius*. A very common bird particularly at Servalar, more often heard than seen.

Magpie Robin *Copsychus saularis*. The bird never showed itself in the open. Though its call was unmistakable, it might have been the chloropsis, the mimic, too.

Tickell's Flowerpecker *Dicaeum erythrorhynchos*. It was one of the most conspicuous of the avifauna of Servalar, both by its number and activity. The profuse and tangled growth of *Loranthus* on *Albizia* sp., the cherry and *Tapobia* (?) would be an indication of its sure presence.

Purplerumped Sunbird *Nectarinia zeylanica*. Unlike its counterpart on the plains, the bird affects the higher foliage and a few pairs were seen mixing with the Loten's sunbirds and the flowerpeckers, all making a cacophony.

POSSIBLE SIGHTING OF SOOTY TERN AT VADINAR, GUJARAT

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When Dr AB Vora, Professor & Head of Botany Department (School of Sciences, Gujarat University) suggested to me to join his team of researchers for the botanical visit to the Marine National Park (Gujarat) I readily accepted the suggestion as I was quite curious to see the marine life including birds.

The trip unexpectedly gave me an opportunity to see one of the uncommon species of terns hitherto unknown to Gujarat.

On 9th October 1991, at about 11.00 a.m. when we were waiting for the Forest Department's motor launch at Vadinar jetty (see the map), I saw a crow sized dark brown tern having long, narrow wings flying over the surface of sea-water. The tern was flying at a distance of about 200 m approximately and hence to have a proper look, I focussed a pair of 8X40 binoculars. As the tern was flying at the level lower than that of the jetty, I could see only upper parts in detail. The tern was uniformly dark sooty brown above. Rarely, the tern exposed its underparts, which appeared white. With the help of the illustration given in Peterson's field guide (Peterson et al., 1988), I identified it as the Sooty tern *Sterna fuscata*. At that time, I was unaware about the close similarities of this species with that of the Bridled tern *Sterna anaethetus*. The tern was feeding in association with 56 Little terns *Sterna albifrons*. It was flying with constant wing-beats in the upwind direction, not very high from the sea-level and was occasionally diving towards the water surface to catch a prey. I showed the tern to the forester (Marine National park, Jamnagar, Gujarat), Mr Jummabhai B. Morya, who has the thorough field-knowledge about this marine ecosystem including its bird life. (He also serves as

a field instructor during nature education camps arranged by the Forest Department). He said that this tern was never seen in the past at the marine national park by him!

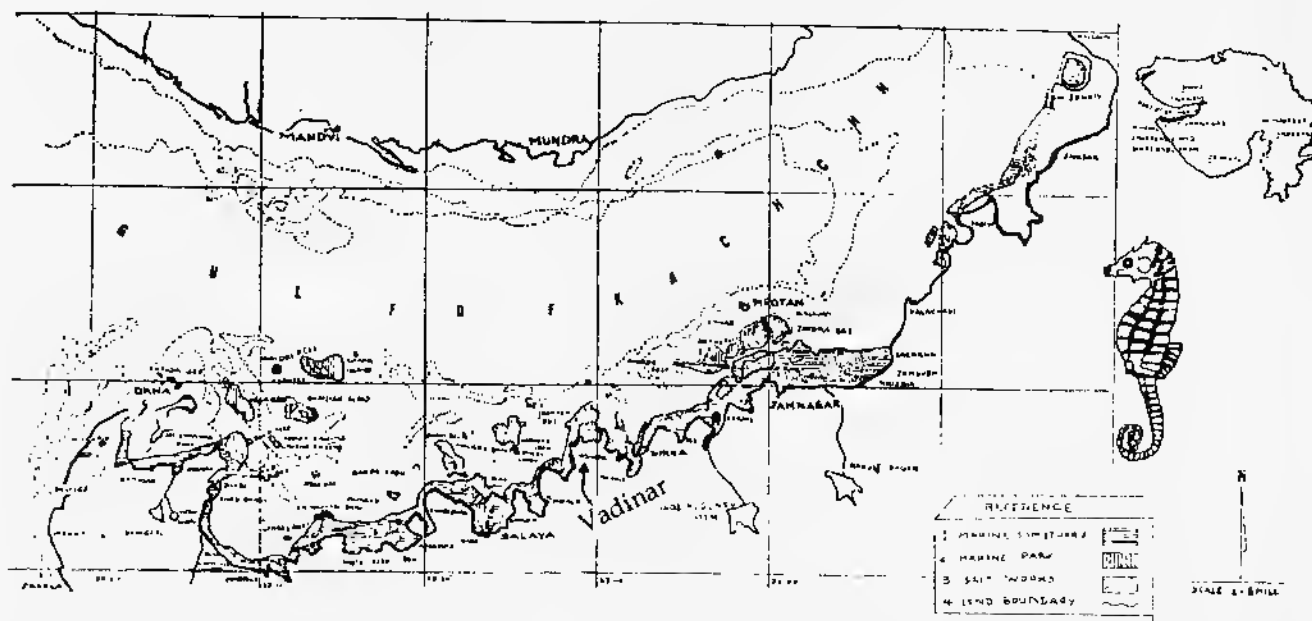
At about 4.30 p.m. when we returned to Vadinar jetty from Kalubhar island of the park, the tern was seen once again, flying at the same place. This time I saw it from very close distance (c.10 ft) as the bird was flying across the jetty just beneath me. This time, I could see white forehead, forked tail (without white streamers) which was not kept 'fanned', white leading edge of the upper-wings and white-spots near the median coverts. The bird was uniformly dark brown above. Once again, I failed to see the underparts in detail and facial marking because the tern constantly kept itself at lower levels and was in motion. However, I could see white under the wings occasionally. I didn't see any white on outer tail feathers.

A school of fish was seen frequently rising to the water-surface in the area where the tern was feeding. The bird was never seen floating on the water. It was silent.

When I returned to Ahmedabad on 11th October, I got a chance to go through various field guides and was perplexed by the close similarities between the sooty tern *Sterna fuscata* of whose identification I was confident at Vadinar and the Bridled tern *S. anaethetus* which according to the handbook 'doubtless occurs off the Sind and Gujarat Coasts' (Ali & Ripley, 1983).

However, by carefully examining field characters of these two species from various field guides (listed in Reference) the possibility that the tern at Vadinar being a

MAP OF THE GULF OF KACHCHH WITH MARINE PARK AND SANCTUARY



Sooty tern is more. I am giving the reasons for this conclusion below :

Why it could not be the Bridled tern: Reasons:

1. The tern observed at Vadinar was similar to the house crow (c.43 cm) in size. It appeared even a bit bigger than the house crow perhaps due to its long wings. In contrast, Bridled tern is known to have the size smaller than the house crow (i.e. 37 cm) (Ali & Ripley, 1983).
2. The tern observed at Vadinar, was uniformly dark, sooty brown above including its crown, nape, mantle, back and wings, except the presence of white spots near median coverts. On other hand, adult Bridled tern in the breeding or summer plumage is known to possess black on crown and nape, (Ali & Ripley, 1983; Harrison, 1985; Bond, 1960). It is also known to possess white collar separating black nape and browner upper-parts (Peterson et al., 1988; Bond, 1960). I did not see such field characters in the tern at Vadinar.
3. The tern observed at Vadinar cannot be the adult Bridled tern in winter plumage either as this species is known to possess brown crown, flecked with white (Ali & Ripley, 1983). I did not see white flecks on the crown of the tern at Vadinar, though it was brown in colour.
4. The juvenile Bridled tern is known to be paler brown above with feathers broadly edged white (Ali & Ripley, 1983). In contrast, the tern which I saw at

Vadinar was dark sooty brown above with feathers not broadly edged white. Young Bridled tern is also known to have white head and hindneck with crown streaked with black (Bond, 1960). I did not see such field characters in the tern at Vadinar.

The Juvenile Bridled tern is known to possess coverts tipped with buff (Harrison, 1985). In contrast, the tern which I saw at Vadinar had white spots on the wing near coverts.

Thus, from the above four points, my 'identification pendulum' swings away from the Bridled tern! Besides, following additional field characters go in favour of the Sooty tern :

1. The Oxford book of birds (Campbell, 1985) states that the Sooty tern's underparts, cheeks and forehead are white and its upper parts and eye stripes are sooty brown. The tern at Vadinar had the similar field characters though its cheeks and eye stripes could not be seen.
2. The compact edition of the Handbook (Ali & Ripley, 1983) states that the immature sooty tern is sooty brown or dark grey above, spotted with buffy white on back and wings. White spots on the wings, near median coverts were seen by me in the tern, at Vadinar. Moreover the tern was uniformly dark sooty brown above.
3. Immature sooty tern's tail lacks (white)streamers; tail is mainly black above with outer rectrice and tips grey and its innermost feathers are tipped brown. Tail is known to be shorter than the adult's

(Harrison, 1985). The tern seen at Vadinar also lacked (white) streamers. However, I could not see any black above, perhaps due to the fact that the tail was not spread (fanned), thus exposing to me only innermost feathers tipped with brown.

4. Immature Sooty tern (perhaps older who has crossed first summer) can be mostly white below, with dusky wash on chin, throat and upper breast (Harrison, 1985).

Unfortunately, the tern at Vadinar did not give me the opportunity to see its chin, throat and breast. However, rarely I could see white on underparts.

From these eight points, I believe that the brown coloured tern seen at Vadinar was the older immature Sooty tern, who might have crossed the first summer but not yet acquired adult breeding plumage fully. It should be noted that most individuals of Sooty terns do not breed until 6th or 8th year, which is the longest period of maturity for Laridae (Harrison, 1985).

It should be noted that the compact edition of the Handbook (Ali & Ripley, 1983) states that immature Sooty tern has buffy white spots on back in addition to those on the wings and the spots are broadest on scapulars and tertials. The tern seen at Vadinar, did not show any such spots on back and scapulars, but were present only near the median coverts. Do the spots gradually disappear during moulting remaining only near median coverts in older immature bird? Moreover, in winter, adult's crown is also speckled with white (Ali & Ripley, 1983). I did not see this field character at Vadinar.

It should also be noted that the Sooty tern is known to be pelagic gregarious bird, seldom coming to the land except in the breeding season. It is usually seen in flocks well out to sea, 'never within 7 or 8 miles of land (Hume in the Laccadives) (Ali & Ripley, 1983).

In contrast, at Vadinar this tern was feeding alone and that too inshore, near jetty! Could the bird have been forced inshore under the stress of weather or travelled on some ship to Gujarat? Most of the Ceylon records for this tern have been in the SW monsoon, during storm periods, when the birds were doubtless forced inshore by stress of weather (Henry, 1955).

The identification of such a rare turn definitely needs criticism from the experienced ornithologists of the country who are well acquainted with various stages of both, Sooty tern and Bridled tern during various seasons.

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BIRDS OF LIMBER VALLEY FOREST (JAMMU & KASHMIR)

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The Limber Valley Forest area falls under Baramulla forest circle (34° 13' N and 74° 11' E), tehsil uri of Baramulla district in Jammu & Kashmir. The area of the notified sanctuary is 26 sq km of which 12 sq km is the core zone.

The range of altitude varies from 2300 to 4000 meters. The area falls under the North-Western Himalayan biotic province of biogeographical classification. The vegetation is temperate montane type. Some of the dominant tree species are *Pinus wallichiana*, *Abies pindrow*, *Cedrus deodara* and *Picea* sp. among the conifers and *Acer plantanoides*, *Betula utilis*, *Morus alba* among the broadleaved trees. Dominant shrub species of the area are *Viburnum nervosum*, *Rhododendron companulatum*, *Rosa webbiana*, *Indigofera heterantha* and *Parrotropsis jacquemontiana*. *Primula* sp, *Iris*

reticulata, *Viola odorata* and *Potentilla* spp. are some of the common herbs which constitute the ground cover with grasses.

The area is extremely important from conservation point of view as it harbours some of the highly endangered and glamorous mammalian and avian species. Markhor Goral, Musk deer, Black Bear, Leopard, Flying squirrels, Martens and Weasles are some of the key mammals of the area. The avifauna includes one of the highly threatened pheasant, the Western Tragopan *Tragopan melanocephalus* which exists here in fairly good numbers. During the surveys a population of about 70 birds was estimated and this is considered as one of the best tragopan population in the country. Apart from Tragopan, there are good

populations of Monal, Koklas and Himalayan Snowcock. Among the raptors species like Golden Eagle, Oriental Hobby and Lammergeir are frequently seen in the area.

Realising the presence of these endangered and important species the area has been notified as Limber Valley Sanctuary on 19th March 1987, vide SR NO.157.

I alongwith my colleagues and students from Aligarh Muslim University first surveyed the area in 1988 for Tragopan. In 1989 a repeat survey was done on a larger scale, which included my colleagues from Bombay Natural History Society (we were working in Kashmir under Bird Migration Project of BHNS), researchers from Kashmir

Family : Accipitridae

1	134	Black Eared Kite	<i>Milvus migrans</i>
2	136	Goshawk	<i>Accipiter gentilis</i>
3	148	Sparrow hawk	<i>Accipiter nisus</i>
4	151	Besra Sparrow hawk	<i>Accipiter virgatus</i>
5	153	Longlegged Buzzard	<i>Buteo rufinus</i>
6	166	Golden Eagle	<i>Aquila chrysaetos</i>
7	168	Tawny Eagle	<i>Aquila rapax</i>
8	181	Himalayan Griffon	<i>Gyps himalayensis</i>
9	186	Scavenger Vulture	<i>Neophron percnopterus</i>
10	188	Bearded Vulture	<i>Gypaetus barbatus</i>
11	215	Oriental Hobby	<i>Falco severus</i>
12	222	Kestrel	<i>Falco tinnunculus</i>

Family : Phasianidae

13	232	Himalayan Snow Cock	<i>Tetrao gallus himalayensis</i>
14	285	Western Tragopan	<i>Tragopan melanocephalus</i>
15	290	Monal Pheasant	<i>Lophophorus impejanus</i>
16	304	Koklas Pheasant	<i>Pucrasia macrolopha</i>

Family : Columbidae

17	515	Hill Pigeon	<i>Columba rupestris</i>
18	516	Blue Rock Pigeon	<i>Columba livia</i>
19	520	Speckled Wood pigeon	<i>Columba eversmanni</i>
20	530	Rufous Turtle Dove	<i>Streptopelia orientalis</i>
21	534	Indian Ring Dove	<i>Streptopelia decaocto</i>

Family : Psittacidae

22	562	Slatyheaded parakeet	<i>Psittacula himalayana</i>
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Family : Cuculidae

23		Himalayan Cuckoo	<i>Cuculus saturatus</i>
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Family : Strigidae

24	617	Scops Owl	<i>Otus brucei</i>
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Family : Apodidae

25	683	Himalayan Swiftlet	<i>Collocalia brevirostris</i>
26	692	White Rumped Spinetail	<i>Chaetura syriatica</i>
27	693	Alpine Swift	<i>Apus melba</i>
28	696	Tree Swift	<i>Apus apus</i>

Family : Alcedinidae

29	719	Lesser Pied Kingfisher	<i>Ceryle rudis</i>
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Family : Upupidae

30	763	Hoopoe	<i>Upupa epops</i>
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Family : Picidae

31	796	Wryneck	<i>Jynx torquilla</i>
32	807	Scalybellied Green Woodpecker	<i>Picus squamatus</i>
33	837	Himalayan Pied Woodpecker	<i>Picoides himalayensis</i>

Family : Hirundinidae

34	914	Dusky Crag Martin	<i>Hirundo concolor</i>
35	916	Swallow	<i>Hirundo rustica</i>
36	923	Redrumped Swallow	<i>Hirundo daurica</i>

Family : Laniidae

37	946	Rufousbacked Shrike	<i>Lanius schach</i>
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Family : Oriolidae

38	950	Blackheaded Oriole	<i>Oriolus xanthornus</i>
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Family : Dicruridae

39	963	Black Drongo	<i>Dicrurus adsimilis</i>
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Family : Sturnidae

40	1006	Common Myna	<i>Acridotheres tristis</i>
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Family : Corvidae

41	1025	Yellowbilled Blue Magpie	<i>Circa flavirostris</i>
42	1053	Jackdaw	<i>Corvus monedula</i>
43	1054	Jungle Crow	<i>Corvus macrorhynchos</i>
44	1059	Raven	<i>Corvus corax</i>

Family : Campephagidae

45	1085	Longtailed Minivet	<i>Pericrocotus ethologus</i>
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Family : Pycnonotidae

46	1125	Whitecheeked Bulbul	<i>Pycnonotus leucogenys</i>
47	1148	Black Bulbul	<i>Hypsipetes madagascariensis</i>

Family : Muscicapidae

48	1290	Variegated Laughing Thrush	<i>Garrulax variegatus</i>
49	1314	Streaked Laughing Thrush	<i>Garrulax lineatus</i>
50	1421	Whitebrowed Blue Flycatcher	<i>Muscicapa superciliosa</i>
51	1423	Slaty Blue Flycatcher	<i>Muscicapa leucomelanura</i>
52	1478	Strongfooted Bush Warbler	<i>Cettia montana</i>
53	1576	Brown Leaf Warbler	<i>Phylloscopus collybita</i>
54	1656	Orangebacked Bush Robin	<i>Erithacus cyanurus</i>
55	1679	Plumbeous Redstart	<i>Rhyacornis fuliginosus</i>
56	1697	Stone Chat	<i>Saxicola torquata</i>
57	1705	Dark Grey Bush Chat	<i>Saxicola ferrea</i>
58	1716	White Capped Redstart	<i>Chaimarrornis leucocephalus</i>
59	1726	Blue Rock Thrush	<i>Monticola solitarius</i>
60	1729	Blue Whistling Thrush	<i>Myiophonus caeruleus</i>
61	1748	Tickell's Thrush	<i>Turdus unicolor</i>

Family : Cinclidae

62	1775	Brown Dipper	<i>Cinclus pallasi</i>
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Family : Paridae

63	1794	Grey Tit	<i>Parus major</i>
64	1799	Greenbacked Tit	<i>Parus monticolus</i>
65	1802	Crested Black Tit	<i>Parus melanotophus</i>
66	1804	Black Tit	<i>Parus rufonuchalis</i>
67	1815	Firecapped Tit	<i>Cephalopyrus flammiceps</i>

Family : Sittidae

68	1824	European Nuthatch	<i>Sitta europaea</i>
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Family : Certhiidae

69	1847	Himalayan Tree Creeper	<i>Certhia himalayana</i>
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Family : Motacillidae

70	1884	Grey Wagtail	<i>Motacilla cinerea</i>
71	1930	House Sparrow	<i>Passer domesticus</i>
72	1946	Cinnamon Tree Sparrow	<i>Passer rutilans</i>

Family : Fringillidae

73	2040	Orange Bullfinch	<i>Pyrrhula aurantiaca</i>
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Family : Emberizidae

74	2051	Rock Bunting	<i>Emberiza cia</i>
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University, Kashmir Agricultural University and Department of Wildlife Protection (J&K).

The present checklist of birds is primarily based on my first survey in 1988 and with few additions in 1989, during the second survey. In all 74 species representing 27 families are listed.

SYNOPSIS

A STUDY ON ECOLOGY OF HOLE-NESTING BIRDS. K.N. PARAMESWARA PANICKER

The following is a synopsis of "A study on Ecology of Hole-Nesting Birds" to be submitted to the University of Bombay for the Degree of Master of Science in Zoology by K.N. Parameswara Panicker under the guidance of Mr J.C. Daniel.

India has a rich avian fauna with varied nesting habits. All or a majority of the families: Picidae, Capitonidae, Bucerotidae, Sittidae, Psittacidae, Coraciidae, Strigidae, Upupidae and Sturnidae are hole nesters. Their nidification is generally known, but no comparative studies of species of different families using a common ecological niche has been studied so far.

The aim of the present study is to compare the breeding habits of the primary hole nest builders like *Psittacula krameri* (Scopoli), *Megalaima haemacephala* (Muller) and the secondary users like *Coracias benghalensis* (Linnaeus), *Acridotheres tristis* (Linnaeus), *Sturnus pagodarum* (Gmelin) and *Petronia xanthocollis* (Burton). As all these birds breed under the same ecological conditions emphasis is given to intra species competition and breeding success.

Birds like Indian Roller, Indian Myna, Brahminy Myna and Roseringed Parakeets are common and their involvement in the economy of agriculture is well known. Rollers and Mynas are considered beneficial to farmers as they devour a large number of harmful pests to agriculture. Rollers feed their young with quantities of Carabid and Tenebroid beetles as confirmed by an analysis of the excreta of the fledglings. These beetles are known pests to fruit crops and stored food grains. Mynas too eradicate Beetles, Crickets, Grasshoppers, Termites, etc. Parakeets are destructive to cultivated crops and orchard fruits. Hence a study of these species particularly with reference to competition for breeding space will be of much value for agriculture as well as to ornithology.

The thesis is divided into chapters starting with an introduction, followed by chapters describing the study areas; overall preference of trees in view of the lightness

and hardness of wood; breeding seasons and the nidification of the birds drawing attention to ecological aspects not described by earlier workers.

The discussion lays emphasis on competition between the species and also difference in behaviour in South India and North India. Literature referred are cited at the end of the thesis.

CORRESPONDENCE

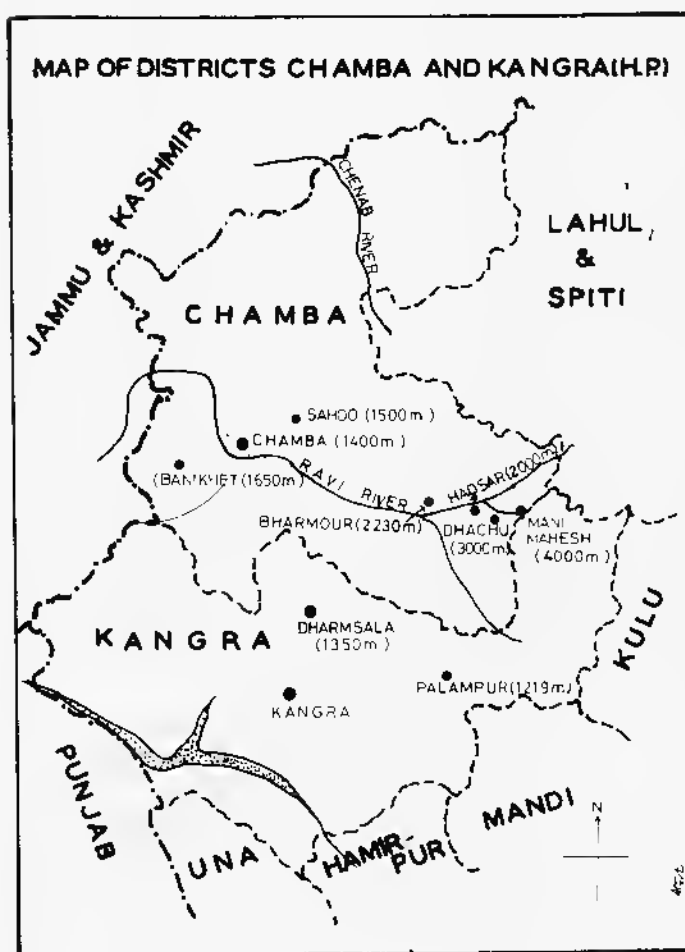
BLUEHEADED ROCK THRUSH IN RAYALASEEMA. MRS GEETHA IYER and MR KARTHIK SHANKAR, *Biology Department, Rishi Valley School, Rishi Valley 517352, Chittoor Dist. A.P.*

We wish to report the sighting of Blueheaded Rock Thrush *Monticola cinclorhynchus* in Horsely Hills at 5.15 p.m on 22nd March, 1992 when we were out birdwatching with the student and staff members of the Birdwatchers' Club of our School. Horsely Hills is less than 3 km from Rishi Valley as the crow flies with only a hillock in between though by road it takes about half an hour to reach because of the ghat section with several hair-pin bends.

We began going round birdwatching in some less frequented parts of the hills hoping to see some grey and yellow wagtails. But we could not see any. Perhaps they had left for cooler climes. As we came to the mini-zoo and the park adjoining it for refreshments around 5.15 P.M we saw a blue and brown coloured bird, just of the size of a bulbul, fly into a tree close to us and settle on a low, leafless branch. Since we had two big and two small binoculars, all quite powerful, every one of us could have a clear view of the bird from several angles. The bird also obliged us by sitting still for more than five minutes. Even when it moved to another branch nearby we were fortunate enough to have a clear view of the bird. We were absolutely certain that it was a thrush from its general features. Its head and nape were blue. A white patch on both the wings was noticeable. Its bill was black. So was the tail but with a thin whitish edge. The entire lower plumage was reddish brown. The bird was single and silent. Since we had with us reference books we had no difficulty in identifying it as Blueheaded Rock Thrush. However, the Compact Handbook of the Birds of India and Pakistan (OUP), which deals with the bird at Serial No. 1723 (Vol.9. 67-68) does not include Andhra Pradesh in the distribution pattern of this bird though Maharashtra, Karnataka, Kerala and Western Tamil Nadu are mentioned. There can be no difficulty in identifying this bird and the sighting it in Rayalaseema Area of Andhra Pradesh needs to be taken note of.

NATURAL DISTRIBUTION OF SOME BIRD SPECIES IN CHAMBA DISTRICT, HIMACHAL PRADESH. ANIL MAHABAL, Zoological Survey of India, High Altitude Zoology Field Station, Solan 173 213, H.P.

An avifaunal survey of Chamba district ($32^{\circ} 10'$ & $33^{\circ} 13'N$ latitude and $75^{\circ} 46'$ & $77^{\circ} 33'E$ longitude) of Himachal Pradesh was undertaken during the summer of July 1990. The district is wholly mountainous and comes under the portion of mid-Himalayas. The survey was undertaken in Chamba town (1400 m), Bharmour (2230 m), Banikher (1650 m), Bharmour (2230 m) and during a mountainous trek from Hadsar (2000 m) to Dhanchu (3000 m) and Mani Mahesh Lake (4000 m) in the Pirpanjal range. Throughout the year, the areas of Dhanchu and Mani Mahesh Lake are covered with snow, except from middle of June to the middle of September.



The distribution pattern of various bird species in Chamba district is not fully known. During this survey, it was noticed that some of the species have extended their distributional and altitudinal range from their known range in the western Himalayas particularly from Kangra. The district Kangra lies south of the district Chamba in Himachal Pradesh. It is possible that the range extension of these species might have been overlooked earlier.

The village Sahoo is located 20 km NE of Chamba town and was noticed to be rich in bird life. Out of the various birds observed, three different species of birds were found to be interesting, namely—Tickell's Flowerpecker *Dicaeum erthrorhynchos*; Purple Sunbird *Nectarinia asiatica* and the Indian Yellowbacked Sunbird *Aethopyga siparaja*. These birds occurred in substantial numbers in the Sahoo area during the period of observation.

According to Ali and Ripley (1983), Tickell's Flowerpecker is a common resident and occurs from Dharmasala and Kangra east along the Himalayan foothills; Purple Sunbird is a summer visitor (March-September) to Himalayan foothills ((Punjab to Sikkim) and occurs up to c.1200 m in Kangra; and the Indian Yellowbacked Sunbird shows vertical movements and occurs in the Himalayan foothills from Kangra east (and also up to c.1200 m in Dharmasala) to Sikkim. This indicates that these bird species have extended their range further north (in Chamba district), from their known range in the Kangra district.

The Himalayan Black Bulbul *Hyppipetes madagascariensis*; Brown Flycatcher *Muscicapa latirostris*; Indian White-eye *Zosterops palpebrosa* and the Whitecapped Bunting *Emberiza stewarti* are common summer visitors (for breeding) to the western Himalayan foothills in Chamba, Kangra, Kulu and some other parts of Himachal Pradesh (Ali and Ripley, 1983).

Brown Flycatchers and Whitecapped Buntings breed in these regions between 900 m and 1800 m from April to July; but during this avifaunal survey they were observed in good numbers in the Bharmour area at an altitude of 2230 m in July. Further, Indian White-eyes breed up to c. 1500 m, locally 2100 m, and the Himalayan Black Bulbuls breed in the western part of the Himalayas between 1000 and 2400 m chiefly during May to July. However, both these species were commonly found at Hadsar (2000 m), few pairs were also noticed in Dhanchu (3000 m) and up to 3200 m on the way to Mani Mahesh Lake. This indicates that these four species of birds may be breeding at a little higher elevation than their known altitudinal range in the Chamba district.

Reference

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OCCURRENCE OF FIRECAPPED TIT IN DUDWA NATIONAL PARK. SALIM JAVED, Centre of Wildlife & Ornithology, Aligarh Muslim University, Aligarh 202002

While working in Dudwa National Park on Bird Communities, I observed a Firecapped Tit *Cephalopyrus flammiceps* on 8th April 1991. The bird was foraging in the foliage of *Dalbergia sissoo* in the mixed hunting party of Grey Tits and Grey Crowned Pygmy Woodpeckers. The bird was continuously watched for five minutes before it flew into the thick foliage of a nearby tree. But there was no doubt about the identification of this species as I have seen and caught this species several times during my field work in Dachigam National Park, Kashmir and Kumaon Himalayas.

Dudwa National Park (28° 21' — 28° 41' N & 80° 30' — 80° 55' E), is located in the Indo-Nepal border about 180 km NNW of Lucknow and falls in Migabasan Tehsil of District Lakhimpur. It falls in the alluvial plain and has characteristic terai ecosystem. The altitudinal range is from 152-183 metres. The vegetation is broadly classified as tropical moist deciduous type.

The Firecapped tit has not been reported earlier either from Dudwa or adjoining localities. In Nepal it is reported as scarce and most recent sighting was from Chedang Kund in Ganesh Himalaya in April 1971 (Fleming et al 1984). There are two subspecies of this species (Ali & Ripley, 1983), the western sub-species *flammiceps* winters in North India and Central India from Etawah, Kanpur to Raipur, Nagpur and Sehore, and two specimens collected from Bharatpur.

While the eastern sub-species *olivaceous* is rarer and has been reported in winter from Sikkim, Bhutan, Buxa, Jalpaiguri duars. The most northward record of this species is from eastern Nepal (no site specification). It is difficult to differentiate between the two sub-species in field unless they are trapped but all the same sighting of this species in the park is the first record.

ROSY PELICAN, WHITE STORK AND BLACK TERN AT THOL WILDLIFE SANCTUARY, N. GUJARAT. KETAN S. TATU, 4/21, Azad Apartments, Near Azad Society, Ambawadi, Ahmedabad 380 015

On 8th November 1991, I visited Thol Lake (declared as wildlife sanctuary on 31-12-1988). The lake is situated in Ahmedabad district and is 72 km² in area. Birds were observed from 8.45 am to 11.15 am with a pair of 8 × 40 binoculars. Observations of following aquatic birds may be of interest.

Rosy Pelican *Pelecanus onocrotalus*

A flock of 12 Rosy Pelicans *Pelecanus onocrotalus* was observed resting in the shallow water of the lake, near an islet. The flock contained 7 adults and 5 juveniles.

Adult birds were distinguished from the very similar Dalmatian Pelican *Pelecanus crispus* by the presence of faintly rose-white colour on upperparts and flesh (pink) coloured legs. I could also see yellow throat-pouches in adults. Juveniles were brown in colour.

White Stork *Ciconia ciconia*

I counted 150 White Storks *Ciconia ciconia* standing in the shallow water of the northern edge of the lake. The other groups containing 40 individuals and 18 individuals were seen standing in the uncultivated fields near the western edge of the lake. In all, 208 white storks were counted within the area.

It may be interesting to note that the White Stork is a winter visitor to Gujarat where they are seen in small numbers (Ali & Ripley, 1968). Dharmakumarsinghji (1955) considers the white stork as a fairly rare bird, but contrary to this, Varu (1981) has reported having seen 40 to 50 birds in Kutch (Parasharya, 1985). It can also be noted that the counts for this species for entire Gujarat are 29 and 106 individuals according to Asian Waterfowl Census of 1989 and 1990 respectively. Thus the numbers of White Storks counted on 8th November 1991 are obviously high; that too at a single site!

The White Storks seen at Thol lake had red beaks, thus they belonged to the European race (Eurasian race possesses black bill).

Black Tern *Chlidonias niger*

Three individuals were observed flying to and from over a small irrigation canal near the lake (c. 100 m away from the western edge). They were identified as Black Terns by the presence of dark grey patches in front of the base of the wings, apart from other features like grey upperparts, white lowerparts, white foreheads, black crowns, unforked tails and black slender beaks.

This species of tern having size smaller than that of the Ring Dove, has been recorded by me at Vastrapur pond-marsh (Ahmedabad city) and Goraj Village's irrigation canal (7 km away from Sanand town, Ahmedabad district) in the months of August, September & October of the year 1991 (Note on their sightings have been sent to NLFB).

Apart from these three species I counted the following:

1. Dabchick <i>Pondiceps ruficollis</i>	: 5
2. Grey heron <i>Ardea cinerea</i>	: 2
3. Purple heron <i>Ardea purpurea</i>	: 1
4. Pond heron <i>Ardeola grayii</i>	: 4
5. White ibis <i>Threskiornis aethiopica</i>	: 6
6. Spoonbill <i>Platalea leucorodia</i>	: 83
7. Greater flamingo <i>Phoenicopterus roseus</i>	: 25
8. Sarus crane <i>Grus antigone</i>	: 4
9. Demoiselle crane <i>Anthropoides virgo</i>	: 20
10. Coot <i>Fulica atra</i>	: 18
11. Blackwinged stilt <i>Himantopus himantopus</i>	: 20
12. Avocet <i>Recurvirostra avocetta</i>	: 3
13. Small Indian pratincole <i>Glareola lactea</i>	: 100
14. Blacktailed godwit <i>Limosa limosa</i>	: 6
15. Ruff <i>Philomachus pugnax</i>	: 25
16. Curlew sandpiper <i>Calidris testacea</i>	: 12
17. Brownheaded/Blackheaded gull <i>Larus sp.</i>	: 2
18. Indian river tern <i>Sterna aurantia</i>	: 29

The following birds were also seen, but the numbers were not counted.

1. Large egret *Ardea alba*
2. Little egret *Egretta garzetta*
3. Painted Stork *Mycteria leucocephala*
4. Shoveller *Anas clypeata*; abundant, approximately 1000.

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BARN OWLS FOR RODENT MANAGEMENT*. K GUNATHILAGARAJ, Department of Environmental Sciences, Tamil Nadu Agricultural University, Coimbatore 641 003

I came across a news item in the March, 1984 issue of the TROPICAL PEST MANAGEMENT. It carried a short item on how owls are being encouraged to breed on oil palm estates in Malaysia in a bid to keep the rat population under control (Tropical Pest Management, 29 (3) : 293 (1983). To this Dr C J Feare of the Ministry of Agriculture, Fisheries and Food, Worplesdon Laboratory, Guildford, UK indicated the possible problems that can arise as a result of

this sort of introduction. Dr. Feare described a similar situation in Seychelles where, in the early 1950s barn owls were introduced into the islands in the hope that they would control the rats in coconut plantations. After initial difficulties, the owls were successful and spread over many of the granitic islands. Although they did eat rats, they seem to find native birds, especially the white tern, *Gygis alba*, a much easier item of prey to locate and eat. White terns have now practically disappeared from the main islands. The owls which are being encouraged to breed in Malaysia may similarly discover that rats are not the only source of potential food and repercussions of their presence may be felt more widely. Contrary to the above forecast, barn owls are proving useful in rodent management in Malaysia as per the communication of Mr. Anthony C. Sebastian (Newsletter for Birdwatchers Vol.31 (5,6) : 9-10, 1991).

* See note Mar/April 91, page 8 on Owl Perches — Editor

ALBINISM IN BIRDS. R G SONI, Conservator of Forests, F-1/1, J N Vyas Colony, Bikaner 334 001

Recently I had gone to Keoladeo National Park, Bharatpur where sighting of albino birds of following three species was reported. I had seen one myself also which was a Little Blue Kingfisher. Its eyes and legs were red, bill was black with red base and rest of the body was white with faint blue-green hue on the rump. It was first sighted by Bholu. In addition to this an albino Coot and a Pheasant-tailed jacana were also seen in the park.

RECENT OBSERVATION ON THE SPOTTEDWINGED STARE IN ASSAM. ANWARUDDIN CHOUDHRY, Near Gate No.1 of Nehru Stadium, Islampur Road, Guwahati 781 007, Assam

The Spottedwinged Stare *Saroglossa spiloptera* (Vigors) is a smaller myna (about 19 cm long) and is known to winter abundantly in Assam (Handbook 5:147). However, during my field work throughout Assam I did not come across a single such myna (except this study).

It was on 5 November, 1991 that I noticed a swarm of very noisy mynas (some 300 to 500) near Langchali in Karbi Anglong district of Assam. The area is a rolling low hilly country (altitude ranging from 180 to 200 m) at the edge of the Dhansiri RF. While the RF is chiefly a tree forest, other side is abandoned jhum with shrubs and grass. I again visited the area on 9, 10, 17, 24, 30 November and 1 December, and on each visit I observed them either in swarms of hundreds or in small groups. Thereafter on 3 December I saw large flocks at the outskirts of Diphu town. However, at first I could not identify them and observed them repeatedly. Unfamiliarity, presence of fog in the morning hours and observations from below were the main hurdles.

The birds were very noisy and audible from about a half a kilometre. Among other mynas, the Greyheaded species *Sturnus malabaricus* has been observed on the canopy layer. No birds seen on the ground. It appears that they arrived in the first week of November, as I did not see them during my survey in September and October.

SIGHTING OF A BURMESE CRESTED SERPENT EAGLE IN THE NORTH BANK OF THE BRAHMAPURA. ANWARUDDIN CHOUDHURY. Near Gate No.1 of Nehru Stadium, Islampur Road, Guwahati 781 007, Assam

On 17 January, 1990 while on a field survey in the wetlands of Jamjing RF (27° 45' N & 95° 0' E; Dhemaj district, Assam) I came across a Crested Serpent Eagle *Spilornis cheela*. A common raptor throughout the area I observed the species on innumerable occasions. But this specimen seemed to be quite different and prompted me to observe it repeatedly. It was visibly smaller and conspicuously paler than the common nominate race *S.c. cheela*. It was a Burmese Crested Serpent Eagle *Spilornis cheela burmanicus* (Swann). But the interesting fact is that the sighting took place in the north bank region of the Brahmapura river. According to the Handbook (Vol.1; p.333) it is restricted to the south of the river only.

FIELD OBSERVATION ON BLYTH'S BAZA IN KARBI ANGLONG, ASSAM. ANWARUDDIN CHOUDHURY, Near Gate No.1 of Nehru Stadium, Islampur Road, Guwahati 781 007, Assam

Blyth's Baza or the Northern Lizard Hawk *Aviceda jerdoni jerdoni* (Blyth) is a little known hawk of the evergreen biotope. It has a conspicuous upstanding crest. During a field survey in Dhansiri RF and adjacent areas of Karbi Anglong district in Assam I observed the bird on three occasions.

I first saw the bird on 5 November, 1991; at about 900 hrs two (may be a pair) were seen flying and sailing in circles at a place midway between Longcholiect and Nailalung (c. 15 km southwest of Diphu). Then they perched on top of a tall tree, locally called 'bhelu' (*Tetrameles nudiflora*) when I could identify them. Then I again observed them (two birds) at about 1 1/2 km west on 10 November. They were sailing when a Jungle Crow *Corvus macrorhynchos* appeared on the scene and started chasing one of them. After sometime the crow gave up. The reason was obvious as for the jungle crow the breeding season had already started.

Further observation was made on 24 November in the same area. Again two birds seen in flight, but this time a Crested Serpent Eagle *Spilornis cheela* was also seen close by. They went in the same direction like a 'team'. The area is basically a forest-edge with tree forest on one side and abandoned jhum with shrubs and grass on the other side.

The birds were observed at an elevation ranging from 100 to 200 m, lower than the known lower limit of c. 350 m. Although known as largely crepuscular, all these observations were during daytime, between 0845 and 1130 hrs (Handbook Vol.1). Their voice has been recorded for the first time (details being published elsewhere).

SWALLOWS AS BIOINDICATORS OF RICE PESTS. DR. S. THIRUMURTHI and MRS. C.P. BHANUMATHI, 4 University Quarters, Bhavanisagar 638451

In our observations during 1989-1991 in the rice fields in and around Bhavanisagar and other rice tracts of Lower Bhavani Project, flocks of common swallows *Hirundo rustica* were observed as useful bio-indicators of high incidence of certain rice pests including rice leaf folder (*Cnaphelocrocis medinalis*) stem borer (*Tryporyza incertulas*) and earhead bug (*Leptocoris acuta*).

In case of leaf folder and stem borer, the swallows are attracted to high moth activity and inundative moth emergence. They make continuous forays over the infected fields in large numbers and feed on the flying moths and help in their control. Besides this the swallow activity is an indication of an impending attack of the larvae of these pests necessitating plant protection methods to save the crop. Swallows also flock to rice fields infested with earhead bugs and devour them in large numbers. Sorties of swallows over rice crop in earhead stage particularly in early hours of the day is a definite indication of earhead bug attack demanding pesticide application.

Insectivorous birds like drongo, myna, crows, cattle egret and herons are associated with rice ecosystem, but the role of swallows as bio-indicators of rice pests appears to be unique.

IDENTIFICATION OF BLACK TERN. KETAN S. TATU, 4/21, Azad Apartments, Near Azad Society, Ambawadi, Ahmedabad 380 015

Thank you for publishing a note about sight record of Black Tern in Ahmedabad through the editorial of NLFB Vol XXXI, No.11 & 12.

However I am afraid that an important field mark has not been mentioned which makes possible the confident identification of this species. A dark patch (or smudge) in front of the base of each wing (on sides of the breast) is an important key to distinguish this species from Whiskered Tern and Whitewinged Black Tern.

WHITEBREASTED KINGFISHER EATING MICE? DR. A.K. GUPTA, *Society for Protection of Environment and Nature, C-168 Lohiya Nagar, Ghaziabad 201 001, U.P.*

About a month back (Dec. 91) in the early morning I was observing fish in my pond. A Whitebreasted Kingfisher used to come and take away gold fishes and others.

While I was around, I saw a Whitebreasted Kingfisher sitting on an electric wire holding a mouse in its beak and moving its head vigorously from side to side. After sometime the bird flew away with the mouse on its beak.

On another occasion, I made a similar observation but this time the mouse fell down from the bird's mouth into our courtyard. I went up to find that the mouse was not dead but moving slowly. I took it up and threw it away into the service lane at the back of our house. I was amazed to see the Kingfisher come down and take away the mouse. It was obvious that the bird was intently watching the proceedings.

JERDON'S COURSERS AT CUDDAPAH. BHARAT BHUSHAN, 27, *Usha Building, 86, K.K.K. Road, Vadala, Bombay 400 031.*

Over the past eight months I have been involved with the BNHS bird migration project and have been localised in the Eastern Ghats of Andhra Pradesh.

It has been exciting work, including two splendid sightings of the rare and endangered bird, the Jerdon's Courser at Cuddapah in December 1991 and January 1992. The first one was with Peter Jackson from IUCN and the second was with Ben King from the American Museum of Natural History. Peter and Ben along with Joanna Van Gruisen and Nigel Landsay are the only four foreigners to have been lucky in spotting the Jerdon's Courser.

The Jerdon's Courser Club is growing slowly but steadily. It includes, apart from myself, Mr. S.A. Hussain of AWB, Messrs. Jaganmohan Rao and Anandmohan (both forest officers of Andhra Pradesh) and Aitanna, the local villager who first spotted it in 1986. Do you want to attempt membership in this most exclusive club in the world?

The Courser area now comes under the Sri Lankamalleswara Wild Life Sanctuary near Cuddapah in Andhra Pradesh.

The other exciting birding highspot was seeing more than 3000 flamingoes along the Sriharikota-Sulurpet road in the Pulicat Wild Life Sanctuary on 10 January 1992 along with my colleagues on the bird migration project, Prakash Rao and K.K. Mohapatra. The tenth of January also marked the starting point of this year's Asian Waterfowl Count. This year we did a record-breaking survey of nearly 80 wetlands in the Eastern Ghats (65 plus) and around Pulicat (nearly 15).

This survey looked at numbers of waterfowl and their species-diversity. High species-diversity would indicate the good health of the wetlands and in turn show up sustainable watersheds in the Eastern Ghats and Coastal catchments. This chain sequence in its own natural way would decide the prosperity of local villages.

I aim to in my report on my work over the past winter point out how studying birds is one of the most perceptive methods of discussing development plans for local human settlements. Wish us luck.

RECOVERY PLAN FOR THE MARBLED TEAL — A WORLD ENDANGERED SPECIES

The Marbled Teal *Marmaronetta angustirostris* is a Red Data Book Species undergoing a major decline and in urgent need of conservation attention. Present information indicates a world population of approximately 30,000 over an increasingly fragmented range across Europe, North Africa and South-west Asia. To promote conservation of the species, IWRB and the Wildfowl of Wetlands Trust are investigating the status of the species and preparing a comprehensive status report and conservation plan. While there is a regular wintering population in Sind Province, Pakistan, the status of the species in India is still unclear. There may be birds wintering regularly in Gujarat, along with occasional visitors to other states.

Anyone with records of this species is asked to send them to the address below, with details of the date, numbers seen, precise location and geographical details. Anyone seeing birds regularly in the same area is asked to send a description of the wetlands where they occur, along with any threats to the site and its birds. All information provided will be fully acknowledged, and contributors will receive their own copy of the final report. Please Contact :

DR. Andy Green
IWRB Threatened Waterfowl Research Group
Wildfowl & Wetlands Trust
Slimbridge, Glos., GL2 7Bt, United Kingdom
Tel: 453 890333 Fax : 453 890827

HOOPOE WITH UNUSUALLY LONG BEAK.

SALLYAMMA MATHEW, Research Officer, Gass Forest Museum, Institute of Forest Genetics and Tree Breeding, Coimbatore 641 002

On 10 October 1969 a Hoopoe was seen in the Southern Forest Rangers College Estate, the present Forest Campus, Coimbatore-2, sitting on the ground weak and inactive. The bird was collected and on examination it was found that its beak had grown to an unusually long size measuring 92 mm and the upper mandible slightly curving away from the lower mandible. The other measurements of the bird also were taken and compared with the available data from the Handbook of the Birds of India and Pakistan by Dr Salim Ali and Dr Dillon Ripley. All the measurements are normal except the measurement of the beak which is almost twice its normal length.

It is difficult to ascribe any real reason for the abnormal growth in length of the beak alone. Perhaps some of your readers will be interested in this and be able to supply useful information.

The specimen is deposited in the Gass Forest Museum. The Museum has a collection of birds comprising 148 species under 42 families, collected from Coimbatore and nearby places. Besides this, the Museum has a large number of wildlife specimens, timber specimens, minor forest products, insect specimens, tribal weapons and ornaments, and several other exhibits representing various aspects of forestry.

The Gass Forest Museum is a part of the Institute of Forest Genetics and Tree Breeding, Coimbatore 641 002, under the Indian Council of Forestry Research and Education, Dehra Dun. It is situated in the Forest Campus on Cowley Brown Road, R.S. Puram, Coimbatore 641 002, 5 km from the Coimbatore Railway Station and 10 km from the Coimbatore Civil Aerodrome.

Hoopoe with unusually long beak —Photo S.Sridhar, ARPS



MAJOR-GENERAL HENRY HUTSON — AN OBITUARY. (Report by Peter Jackson 1172, Bougy, Switzerland)

Major-General Henry Hutson, whose book *THE BIRDS ABOUT DELHI: TOGETHER WITH A COMPLETE LIST OF BIRDS OBSERVED IN DELHI AND THE SURROUNDING COUNTRY* made an important contribution to Indian ornithology, died on 23 December 1991, aged 98. The book was published by the Delhi Bird Watching Society in 1954 and contained General Hutson's notes for the wartime period June 1943 to May 1945 when he was Deputy Engineer-in-Chief of the Indian Army. The editor was the late Lieutenant-General Sir Harold Williams, the President of the Bird Watching Society.

In an introduction to the book, General Williams noted that the first attempt at a systematic list of Delhi birds appeared to be that of winter birds published by S. Basil-Edwards in the Journal of the Bombay Natural History Society in 1926 (Vol. XXXI, pp 261-73 & 567-78). In December 1947, Sir N.F. Frome published a paper (JBNHS Vol. XLVII, pp. 277-300) based on his own and others' observations during some 15 years, including all known records within 30 miles (48 km) of Delhi to that date. The Editor of the Journal inserted additional notes based on General Hutson's list, and further notes by Sir Edward Benthall, Horace Alexander and others appeared in subsequent issues.

I arrived in Delhi in 1954 and received from General Williams one of the first copies of General Hutson's book. It had a profound effect on my life because the fascinating observations of Delhi bird behaviour introduced me to a life-long passion and led to a career in nature conservation. As a result, I was able to contribute to the major book by the late Mrs Usia Canguli, *A GUIDE TO THE BIRDS OF THE DELHI AREA* (Indian Council for Agricultural Research, 1975), which added her own extensive observations to those of General Hutson. Alas, she never saw it in print, for she died before it was published.

An obituary in The Times of London (30 December 1991) recalled that General Hutson's interest in birds began in Sudan, where he served after the First World War, in which he won the Military Cross and three Mentions in Despatches. He became an ornithologist of international repute, writing a book on the birds of Nigeria after a posting there, and contributing to ornithological journals. He was appointed Deputy Engineer-in-Chief in India as a Major-General in 1944. He returned to London before retirement in 1947. He then became Chief Engineer of the Forestry Commission for 11 years, after which he lived in Southern Rhodesia (now Zimbabwe) with his farmer son, Brian.

Cover : Golden Oriole (*Oriolus oriolus*) is one of the loveliest birds, attired in dazzling golden yellow and black. Its harsh call *chee-ah*, is replaced in summer months with clear liquid flutey notes *Pee-Lo-Lo*; a pleasant sound our ears long to hear. Particularly fond of the flower nectar of 'Flame of the forest' - *Erythrina* and *Butea* trees Sps.

Photo : S. Sridhar, ARPS

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WHITE-WINGED WOOD DUCK IN INDIA

Continued from Front Inside Cover

Duck are to survive in the wild. The following measures need to be taken.

1. Field surveys should be conducted in all the sites in Table 1. In addition, the following protected areas have suitable habitat and should be surveyed: Pabha WS (Wildlife Sanctuary, Upper Assam), Itanagar WS (Arunachal Pradesh), Intanki WS (Nagaland) and Dampa WS (Mizoram).
2. More sites with Wood Duck should be protected. Doom Dooma Reserve Forest is very important and should be made a Wildlife Sanctuary. Rodgers & Panwar (1988) proposed a number of new protected areas in the Wood Duck's range in Assam and Arunachal Pradesh: Tinkhopani NP, Digboi WS, North Cachar Hill and Barail WS, Hollongapar WS, Desangmukh WS, Dhansiri-Kaki WS, Dhansiri-Kaki NP, Mikhir Hills WS, Inner Line Forest WS, Tirap Evergreen NP. These sites should be surveyed, and any areas containing Wood Duck should be gazetted as proposed.
3. The boundaries of Dibru-Saikhowa WS and Nam Dapha NP should be extended to include more Wood Duck habitat.
4. Dibru-Saikhowa WS and D'Ering Memorial WS should be upgraded to National Parks to improve and protection of the Wood Duck and their habitat.
5. Education campaigns should be launched around the sites in Table 1 to stop people from hunting Wood Duck and cutting down old trees with holes that stand near forest streams, ponds or bheels. The birds need these holes for nesting.
6. Experienced ornithologists and their students should be encouraged to study Wood Duck ecology and behaviour in the field. We still know very little about what limits population density and breeding success, how the birds adapt to degraded and disturbed habitats, how far they will fly from one forest area to another and many other important things.

Please forward your data to



**THE
WILDFOWL
& WETLANDS TRUST**
Slimbridge, Gloucester GL2 7BT, UK

Please do anything you can to encourage the authorities and other people in India to take these necessary actions to save this fascinating bird. More details of the project are available from Green (1992) or by writing to the author at the above address. Anyone in a position to do field surveys or to conduct research is particularly encouraged to write for more details of the sites requiring surveys and appropriate survey and research methods. Please also inform the author of details of any past or future records of the species so that we can continue to assess the status of the species and work for its conservation.

Table 1. Sites in India where *C. scutulata* has been recorded since 1980, with estimates of population size based on sightings or field workers' minimum estimates. WS = Wildlife Sanctuary. NP = National Park. RF = Reserve Forest.

* = Key Sites particularly important to the conservation of *C. scutulata*.

[] = Possible Sites, where *C. scutulata* has recently been reported but there is doubt over the reliability of the report.

1. Dibru-Saikhowa WS, Assam	20	*
2. Nam Dapha NP, Arunachal Pradesh	7	*
3. D'Ering Memorial WS, Arunachal Pradesh	4	*
4. Mahao WS, Arunachal Pradesh	2	*
5. Doom Dooma RF, Assam	9	*
6. Joypur RF, Assam	4	
7. Kumsong RF, Assam	1	
8. Lumding/Kopili river, Nowgong Dis., Assam	2	
9. Phillobari RF, Assam	1	
10. Jiri RF, Assam	2	
11. Subansiri river, Lakhimpur Dis., Assam	2	
12. Bogapani, Dibrugarh Dis. Assam	3	
13. Namchick RF, Assam	2	
14. Kukurmara RF, Assam	1	
15. Duarmara RF, Assam	2	
16. Buridihing RF, Assam	2	
17. Dihangi, North Cachar Dis., Assam [North Cachar Hill & Barail RF, Assam] [Hansara, Sibsagar Dis., Assam]	1	

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